NHS Trust
M N Sheppard, Department of Histopathology, Royal Brompton and Harefield NHS Trust
F Barah, Department of Virology, University of Manchester, Manchester, UK
M L Chiswick, Neonatal Medical Unit, St Mary's Hospital, Manchester, UK
G V McDonnell, Department of Neurology, Royal Group of Hospitals, Grosvenor Road, Belfast, UK
M D Chapman, Department of Neuroimmunology, National Hospital for Neurology and Neurosurgery, London, UK
J B Bingham, Departments of Radiology, Guy's and St Thomas's NHS Trust, London, UK
P Kelleher, Department of Immunology, Wright-Fleming Institute, Imperial College London, UK

Competing interests: none declared.

REFERENCES

1 **Barah F**, Vallely PJ, Chiswick ML, *et al.* Association of human parvovirus B19 infection with acute meningoencephalitis. *Lancet* 2001;**358**:729–30.
2 **Weiner SM**, Klein R, Berg PA. A longitudinal study of autoantibodies against central nervous system tissue and gangliosides in connective tissue diseases. *Rheumatol Int* 2000;**19**:83–8.
3 **Kerr JR**, Barah F, Mattey DL, *et al.* Serum tumour necrosis factor-α (TNF-α) and interferon-γ (IFN-γ) are detectable during acute and convalescent parvovirus B19 infection and are associated with prolonged and chronic fatigue. *J Gen Virol* 2001;**82**:3011–19.
4 **Hicks KE**, Cubel RCN, Cohen BJ, *et al.* Sequence analysis of a parvovirus B19 isolate and baculovirus expression of the non-structural protein. *Arch Virol* 1996;**141**:1319–27.
5 **Shimuzu Y**, Ueno T, Komatsu H, *et al.* Acute cerebellar ataxia with human parvovirus B19 infection. *Arch Dis Child* 1999;**80**:72–3.
6 **Oster-Granite ML**, Herndon RM. The pathogenesis of parvovirus-induced cerebellar hypoplasia in the Syrian hamster, Mesocricetus auratus. Fluorescent antibody, foliation, cytoarchitectonic, Golgi and electron microscopic studies. *J Comp Neurol* 1976;**169**:481–521.
7 **Ramirez JC**, Fairen A, Almendral JM. Parvovirus minute virus of mice strain I multiplication and pathogenesis in the newborn mouse brain are restricted to proliferative areas and to migratory cerebellar young neurons. *J Virol* 1996;**70**:8109–16.
8 **Siegl G**, Cassinotti P. Parvoviruses. In: Collier L, Balows A, Sussman M, eds. *Topley & Wilson's microbiology and microbial infections*, vol 1. London: Arnold, 1998:261–79.
9 **Mitomo M**, Hosoki T, Sai H, *et al.* Radiological diagnosis of viral encephalitis. *Nippon Rinsho* 1997;**55**:815–21.
10 **Stohlman SA**, Hinton DR. Viral induced demyelination. *Brain Pathol* 2001;**11**:92–106.
11 **Isumi H**, Nunoue T, Nishida A, *et al.* Fetal brain infection with human parvovirus B19. *Pediatr Neurol* 1999;**21**:661–3.
12 **Anderson MJ**, Higgins PG, Davis LR, *et al.* Experimental parvoviral infection in humans. *J Infect Dis* 1985;**152**:257–65.
13 **Mintz M**, Rapaport R, Oleske JM, *et al.* Elevated serum levels of TNF are associated with progressive encephalopathy in children with acquired immunodeficiency syndrome. *Am J Dis Child* 1989;**143**:771–4.
14 **Druschky K**, Walloch J, Heclanann J, *et al.* Chronic parvovirus B19 meningoencephalitis with additional detection of Epstein–Barr virus DNA in the cerebrospinal fluid of an immunocompetent patient. *J Neurovirol* 2000;**6**:418–22.
15 **Kerr JR**, Mattey DL, Thomson W, *et al.* Association of symptomatic acute parvovirus B19 infection with HLA class I and class II alleles. *J Infect Dis* 2002;**186**:447–52.
16 **Vrethem M**, Ernerudh J, Cruz M, *et al.* Susceptibility to demyelinating polyneuropathy in plasma cell dyscrasia my be influenced by amino acid position 9 of the HLA-DR beta chain. *J Neuroimmunol* 1993;**43**:139–44.

NEURONLINE

PubMed: http://www.pubmed.org

First, library shelves groaned under the weight of volume after volume of Index Medicus. Then came Medline, a journal abstracting and search service initially available on CD (at a price) and, for the UK higher education community, by telnet and then on the web . . . and then there was PubMed.

It is a mark of its success that it already seems to have been with us forever . . . but it is only 5 years since former American Vice President Al Gore, in a breathtaking act of generosity, announced free internet access to PubMed. In a world where knowledge is increasingly viewed as a commodity (viz the human genome project), PubMed demonstrates the global power of the internet to transform access to information.

So what can it do? PubMed now contains more than 12 million citations (about a million more than Medline), and search fields include Medical Subject Heading (MeSH) keyword and title or abstract word or phrase. The search returns a full citation including an abstract of the article and, increasingly, a hyper-text link to where the article may be obtained online. In a recent PubMed search I had immediate full text access for 16 of 20 "hits". The department photocopier will soon be obsolete, and in many respects the library already is.

There are some drawbacks. Firstly, citation searching is not available (but see www.mimas.ac.uk), so looking forward from important papers is not possible. Secondly, abstracts on your computer may seem as reliable as full text articles in a library across town, encouraging a superficial engagement with the literature.

Finally, PubMed can be a (dubious) source of diagnostic assistance: searching for "case report", "deafness", "retinitis pigmentosa", and "myopathy", for instance, returns only 24 hits, most of which describe a mitochondrial disease. Comparison of this approach with a more traditional line of diagnostic attack has yet to be subjected to a randomised controlled trial.

M R Macleod
Department of Clinical Neurosciences, Western General Hospital, Crewe Road, Edinburgh EH4 2XU, UK; malcolm@apoptosis.freeserve.co.uk